

Appl. No. 10/050,260
Amendment and/or Response
Reply to Office action of 7 January 2004

Page 7 of 9

REMARKS / DISCUSSION OF ISSUES

Claims 1-21 are pending in the application. Claims 13-21 are new, claims 8-10 are objected to, and the remainder are currently rejected.

Applicant(s) thank(s) the Examiner for acknowledging the claim for priority and receipt of certified copies of all the priority document(s).

The Office action rejects claims 1-7, 11, and 12 under 35 U.S.C. §103(a) over U.S. Patent No. 5,115,379 to Nagai in view of U.S. Patent No. 5,249,104 to Mizobe. Applicant respectfully traverses this rejection. As explained below, all of the claims are patentable over any permissible combination of the cited references.

Claims 1-12 are patentable over the cited references at least because neither of the two cited references teach or suggest the combination recited in independent claim 1 of the feature of cavities extending only partially through the optical waveguide plate toward the light emission surface, combined with the feature of the upper sides being covered with a first reflecting layer, so that the coupling of the light into the optical waveguide plate takes place through the side walls, and a portion of the light coupled from one of the cavities into the side walls can reach and be emitted from an area of the light emission surface directly above said one of the cavities. The primary reference, Nagai, does not teach or suggest the feature of the cavities extending only partially through the optical waveguide plate. Furthermore, there would be no motivation to combine this feature from another reference, such as that of Mizobe, because Nagai teaches away from this combination by its own teaching which puts a light barrier directly over the light emitting surface that is above its lamp 16, 65. Neither does Mizobe teach or provide any motivation for putting a reflecting layer above its cavity, since this would block the light. The only motivation for combining these two features, which would be to allow light emission directly above an LED without creating a "hot spot", is not taught or suggested in the prior art. Accordingly, the references cannot be combined in this way under 35 U.S.C. §103(a).

Appl. No. 10/050,260
Amendment and/or Response
Reply to Office action of 7 January 2004

Page 8 of 9

Claims 3, 7, 8, and 13-21 are patentable over the cited references at least because neither of the cited references teach or suggest the reflecting layer on the lower side of the cavity or cavities, that is, the side farther away from the emission surface, as recited by claims 3 and 13. The Office action asserts that the second reflecting layer reads on the display panel 1 of Nagai. However, this is incorrect. Even assuming that the display panel 1 of Nagai extends beneath the lamp 16 in figure 8b, it is clear from both figure 8b and figure 10 of Nagai, and the accompanying description, that the display panel 1 would have to be outside the cavity in question, not covering the lower side of the cavity as recited in the claims, and additionally any reflective effect it might have would be blocked by the intervening substrate 64 and resin sealing plug 66 (column 5, lines 33-35), as well as the intervening electroconductive layer 13 provided on the back surface of the resin plate 12 (column 4, lines 65-68). Accordingly, claims 3, 7, 8, and 13-21 are patentable over the cited references both individually and in combination.

Additionally, it is noted that neither of the cited references teach or suggest the patentable features of claims 8 and 16 (second reflecting layer separated from the optical waveguide plate by an air gap), claims 9 and 17 (first reflecting layer extending beyond the cavity into the optical waveguide plate), claims 10 and 18 (first reflecting layer extending along the side wall of the cavity, or claims 11 and 19 (cavity edge opposite upper side of cavity surrounded by another reflecting layer).

Accordingly, withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-7, 11, and 12 is respectfully requested.

The Office action objects to claims 8-10 as depending from a rejected base claim, but the Examiner states they will be allowable once rewritten in independent form, etc. Applicant thanks the Examiner for this affirmation of patentable subject matter. Claims 8-10 are amended accordingly, without changing their scope in any way.

Appl. No. 10/050,260
Amendment and/or Response
Reply to Office action of 7 January 2004

Page 9 of 9

In view of the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance. If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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